

Figure 1B

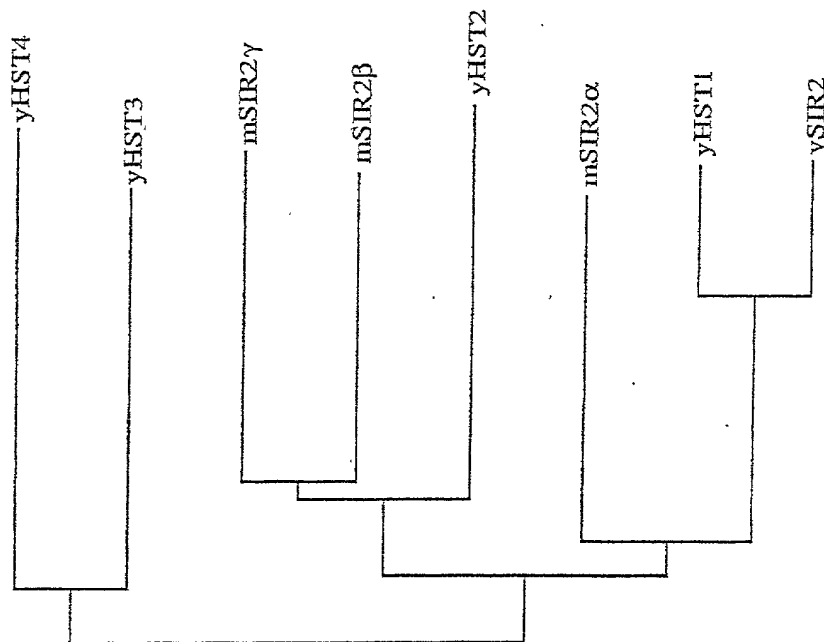


Figure 1A

YSIR2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
-------	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

Figure 2C

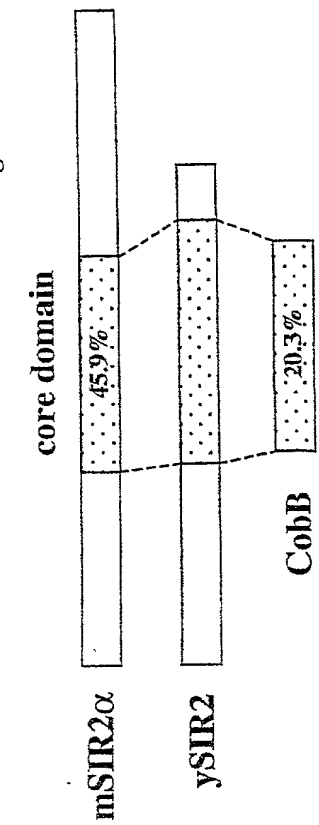


Figure 2D

1	MADEVALALQAAAGSPSAA	AAAMEAASQP	ADEPLRKRPRRDG
41	PGLGRSPGEP	SAAVAPAAAGCEAAS	AAAPAAALWREAAGAA
81	ASAREAPAT	AVAGDGN	SGGLRREPRAAADDFDDEGEER
121	DEAAAAA	AAAAI	GYRDNILLTDGLLTNGFHSCESDDDDRIT
161	SHASSDWT	TPRPRI	GPYTFVQQHLMIGTDPRITLKDLPPE
201	TIPPE	LDDMTL	WQIVINILSEPPKRRKRDINTIEDAVK
241	LLOECKKI	IVLTGAGV	SVSCGIPDFRSRDGIYARLAVDFP
281	DLPDPQAM	FDIEYFRK	DPFPFFKFAKEIYPGQFQPSLCHK
321	FIALSDKEG	KLLRNYTQ	NDITLEQVAGIQRILOCHGSFAT
361	ASCLICKY	KVDCEAVRG	DFNQVPRCPADPEPLAIMK
401	PEIVFFGEN	LPEQFHRAMKY	DKDEVLLIVIGSSLKVRPV
441	ALIPSSI	PHVEVPQI	LINREPLPHLHFDVLELLGDCDVLINE
481	LCHRLGGEY	AKLCCNPV	KLSEITEKPPRPQKELVHLSLEP
521	PTPLHISED	SSPERTVP	QDSSVIATLVDOATNNVNDLE
561	VSESSC	VEEK	PQEVQTSRNVENINVENPDKAVGSSTADK
601	NERTSVAET	VRKCPNRL	LAKEQISKRLEGNQYLFVPPNRY
641	IFHGAEVY	SDSEDDV	LSSSCGNSDSQTCQSPSLEEPL
681	DESEIEEFY	NGLEDOT	ERPECAGGSGFGADGGDQEVVNEA
721	IATRQEL	TDVNP	PSDKS

Figure 2A

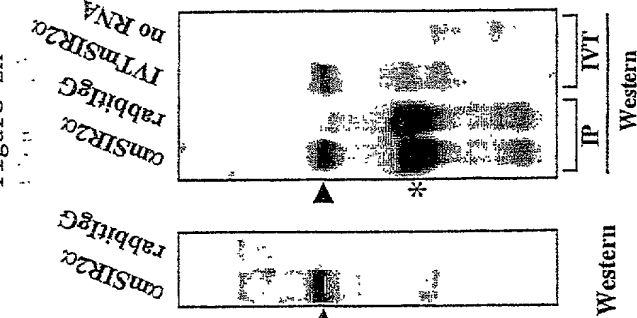


Figure 2B

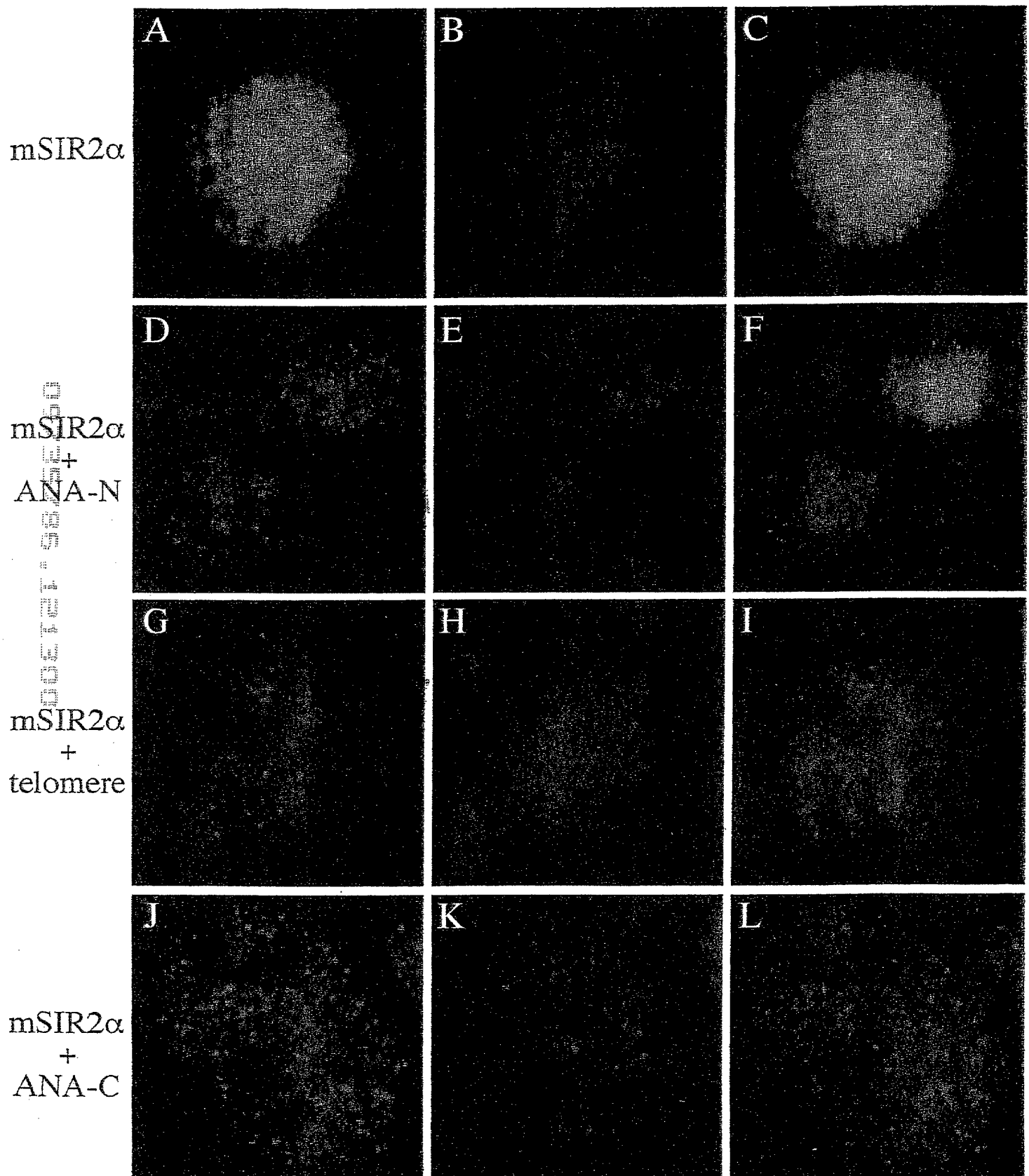


Figure 3

006727 99/256260

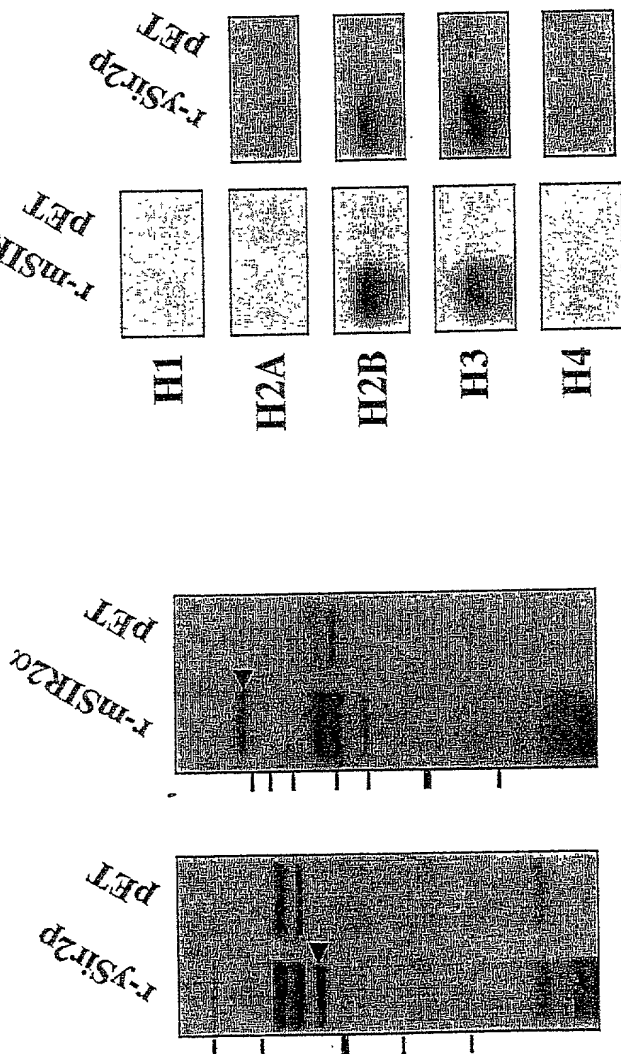


Figure 4A

Figure 4B

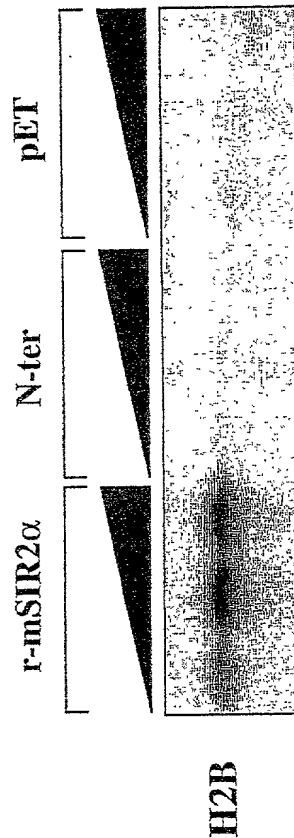


Figure 4D

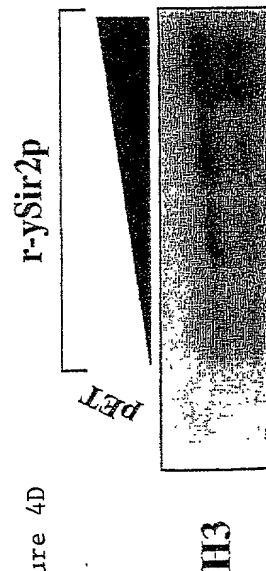


Figure 4E

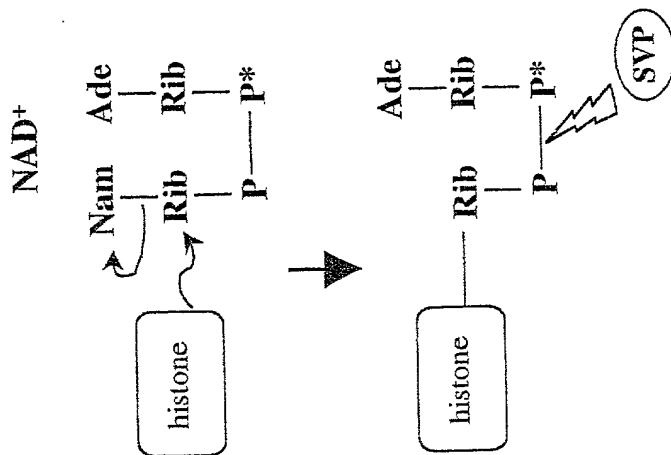
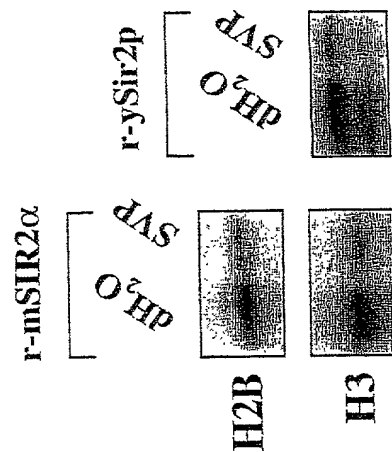


Figure 4C

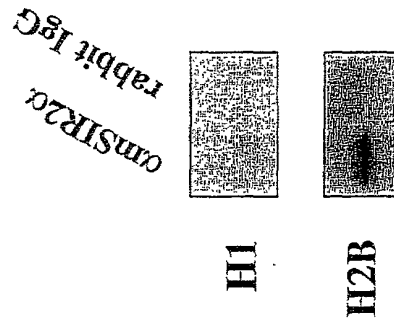


Figure 4G

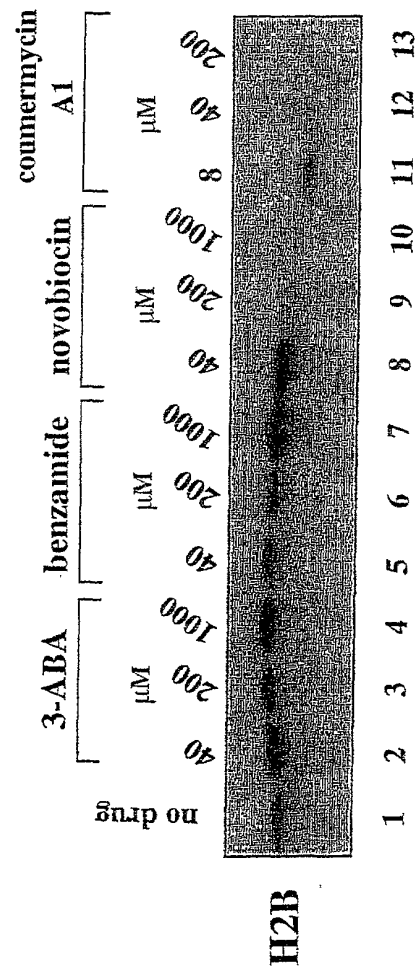


Figure 4F

unAc * * ARTKQTARKSTGGKAPRKQLC
diAc

monoAc	SGRGKGGKGLGKGGAKRHRC	*	*	*	*
tetraAc	AGGKGGKGMGKVGAKRHSC	*	*	*	*

pET **mSIR2 α**

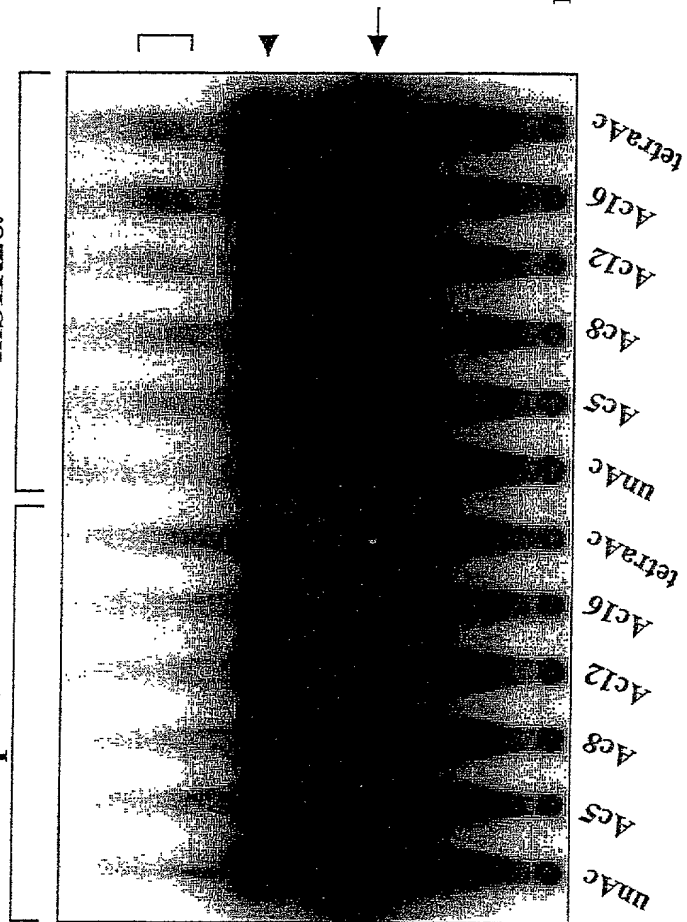
[illegible]

Figure 5B

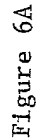


Figure 6B

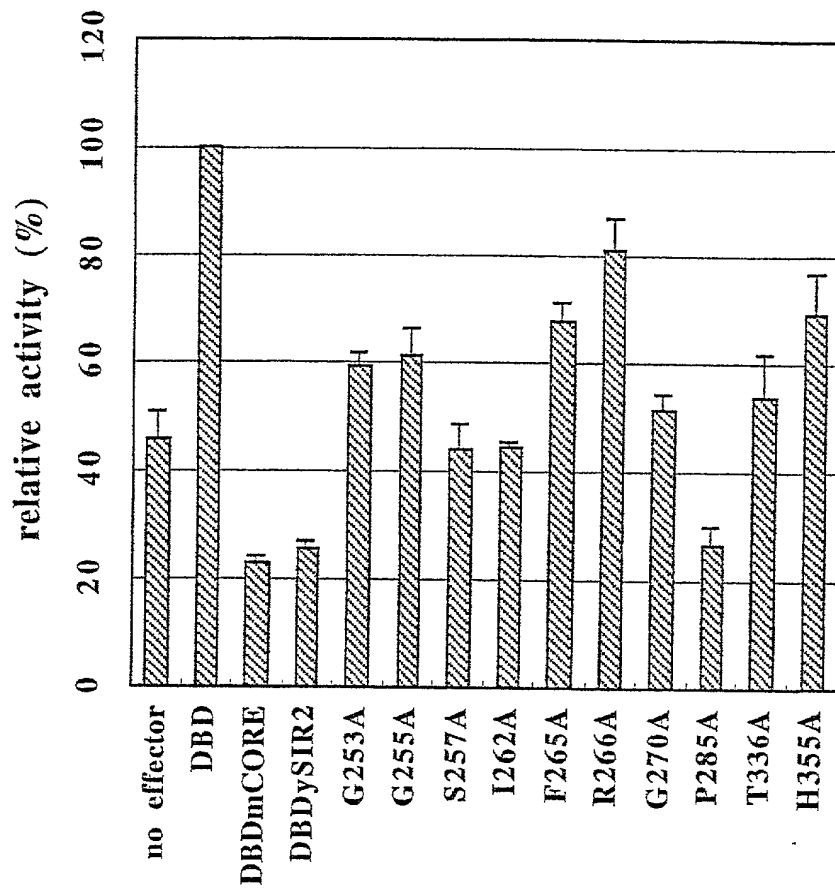


Figure 6D

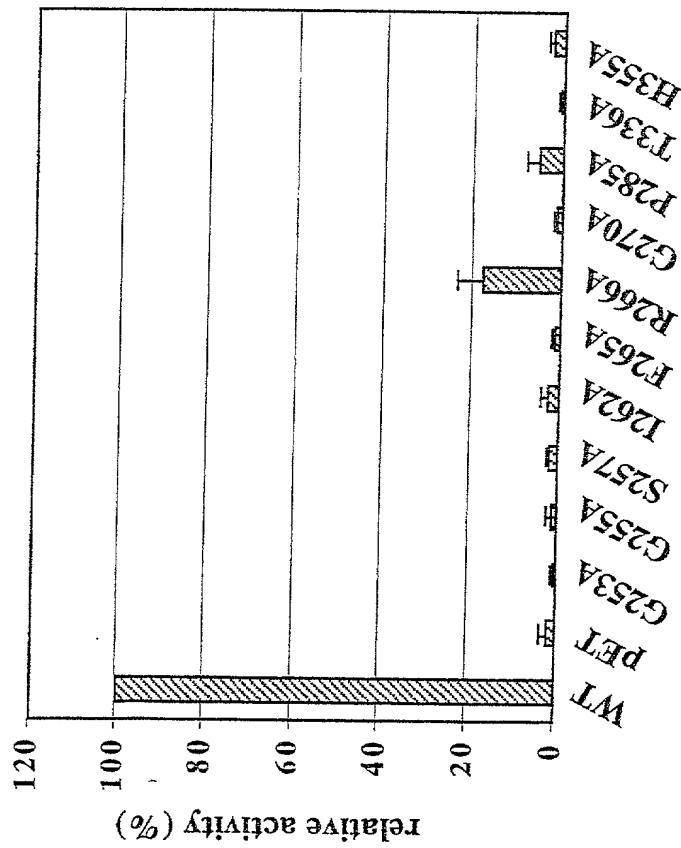


Figure 6C

0050.1618-001

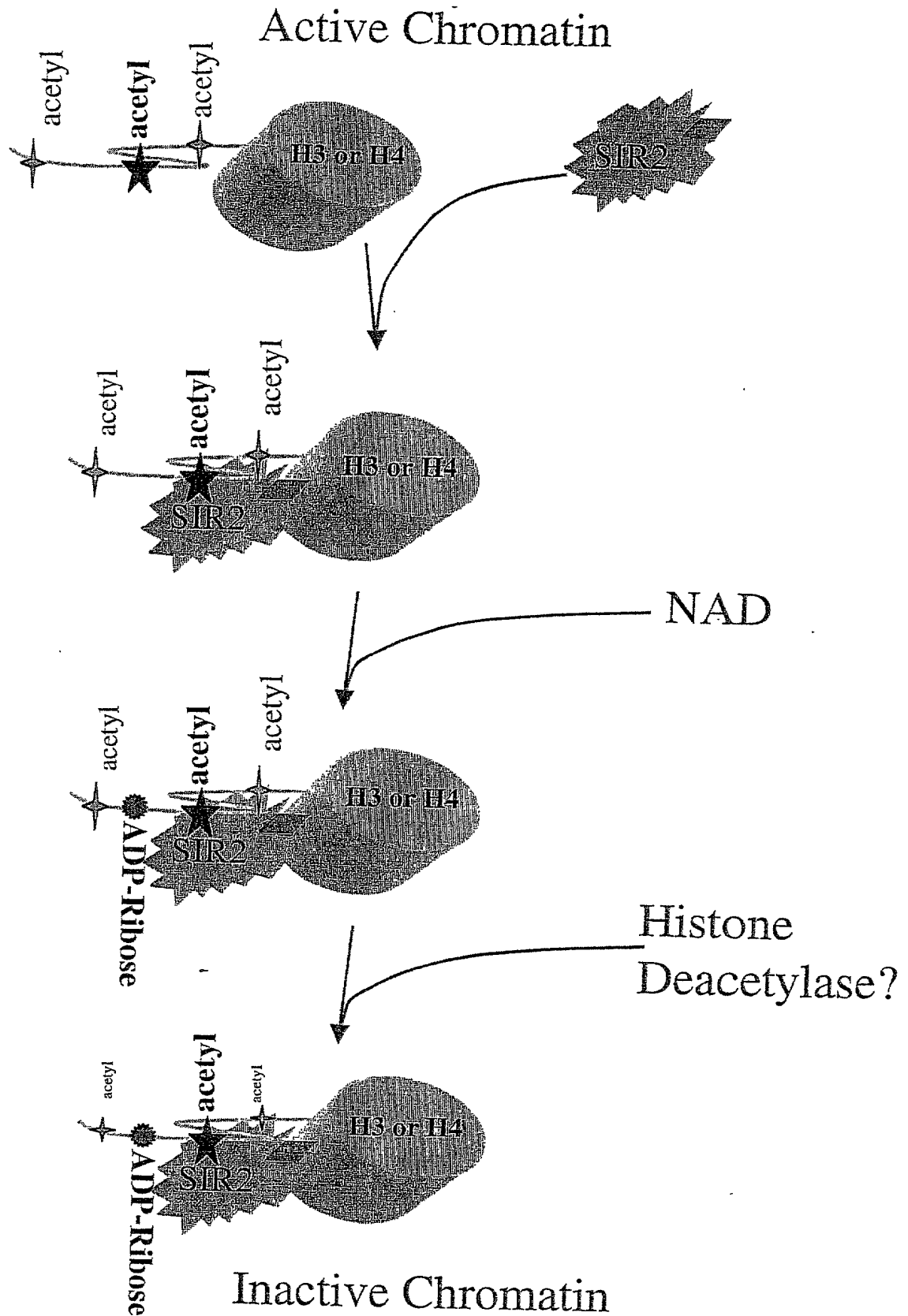


Figure 7

09735785.121300

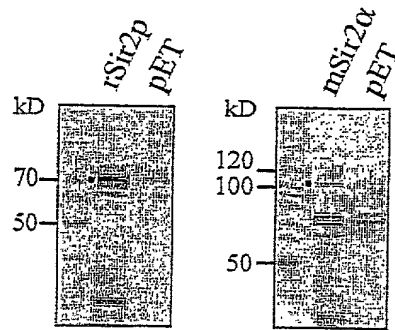


Figure 8a

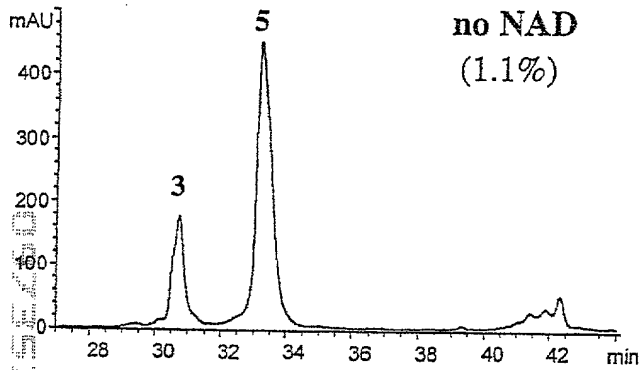


Figure 8b

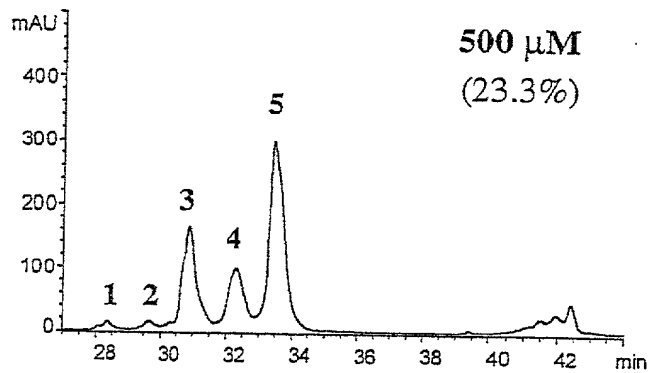


Figure 8e

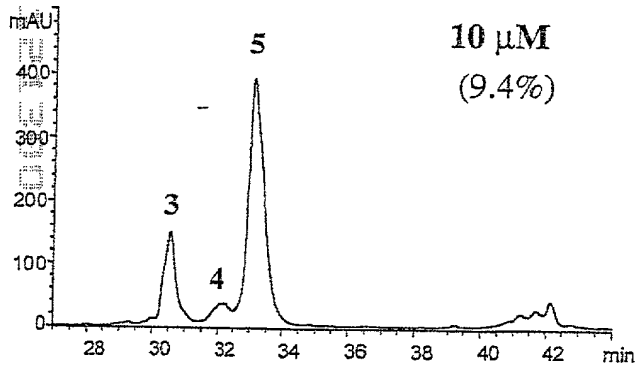


Figure 8c

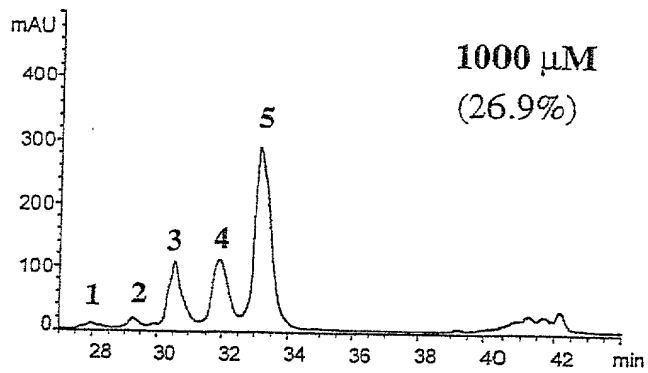


Figure 8f

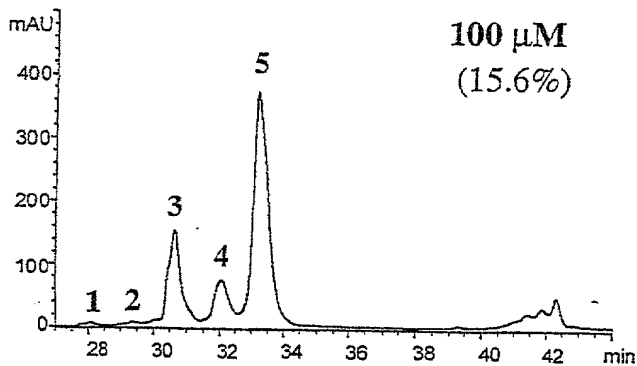


Figure 8d

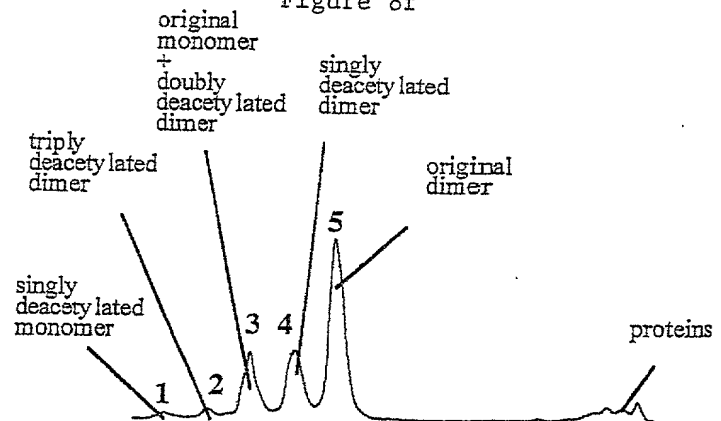


Figure 8g

Figure 9a

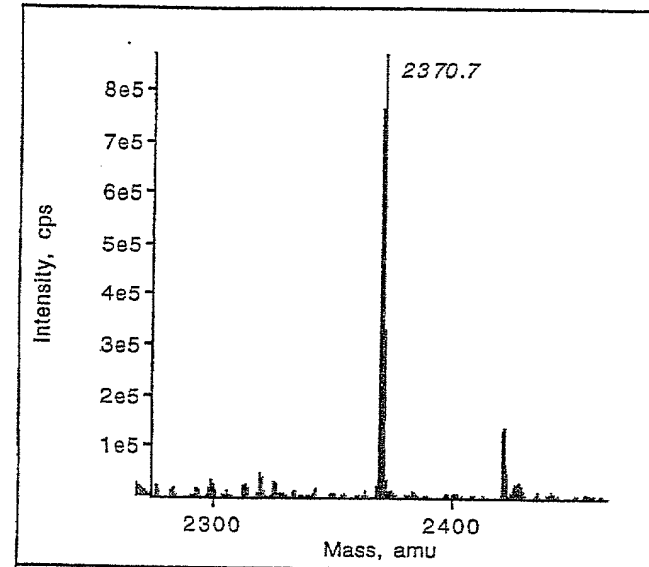


Figure 9b

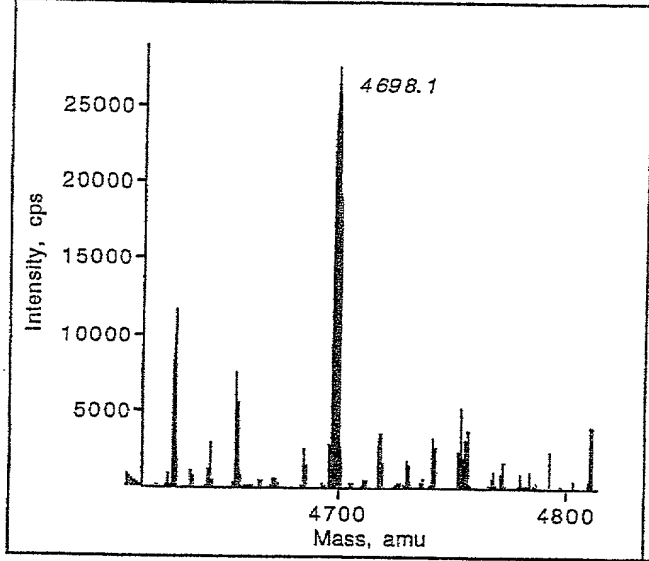
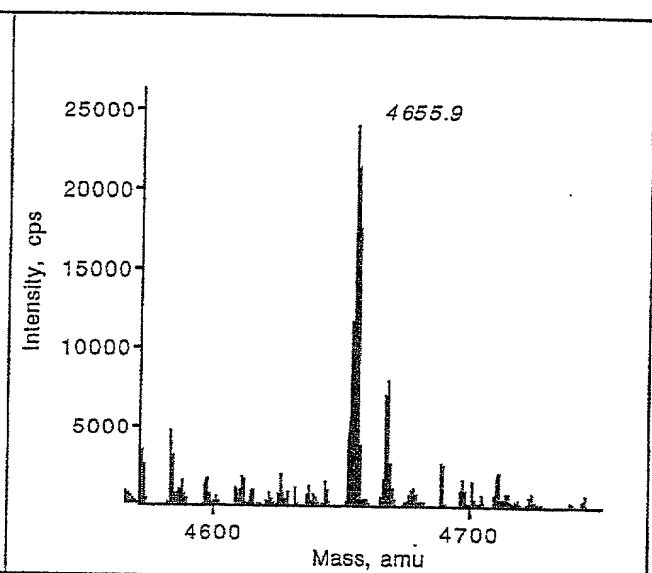


Figure 9c

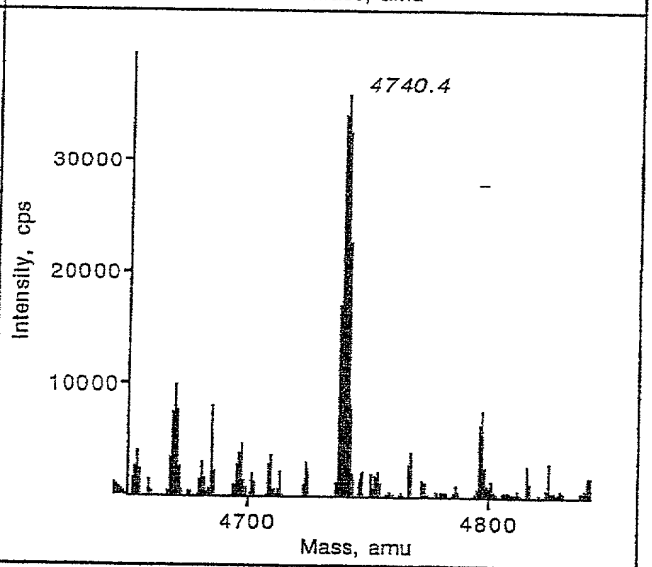


Figure 9d

0050.1618-001

peak 4

peak 5

9

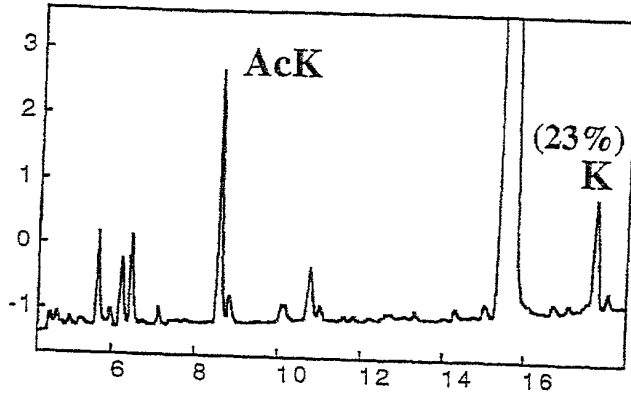


Figure 10a

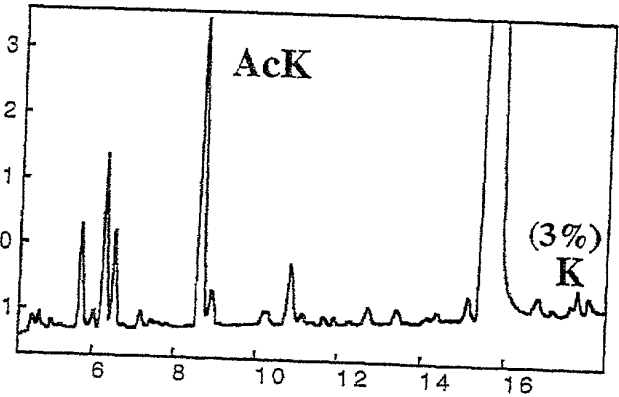


Figure 10d

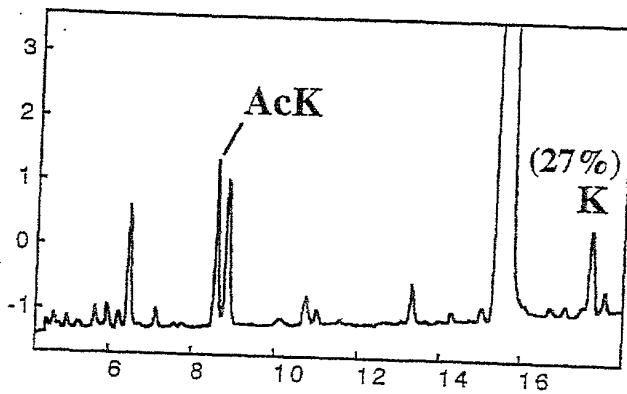


Figure 10b

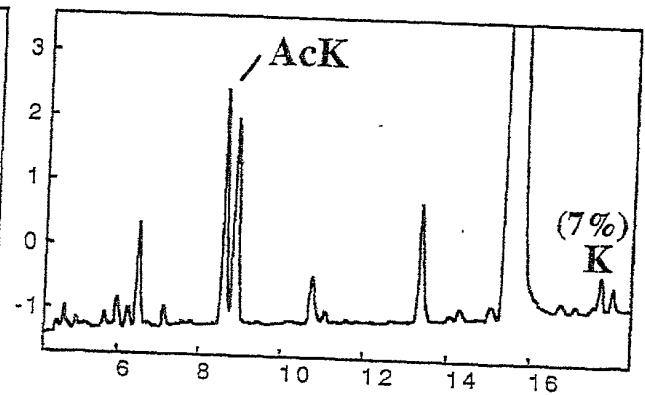


Figure 10e

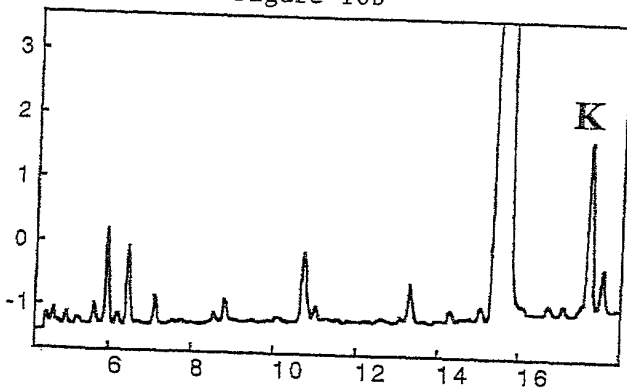


Figure 10c

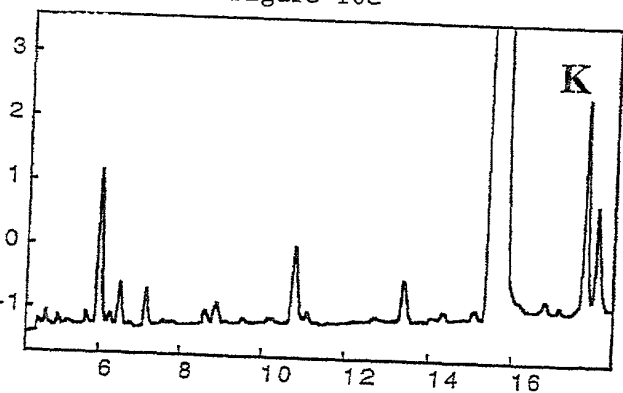


Figure 10f

14

18

0050.1618-001

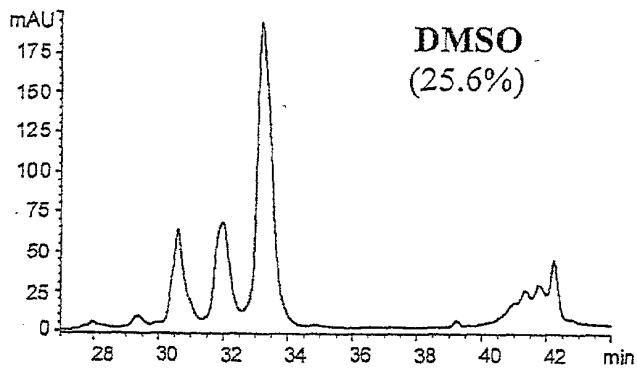


Figure 11a

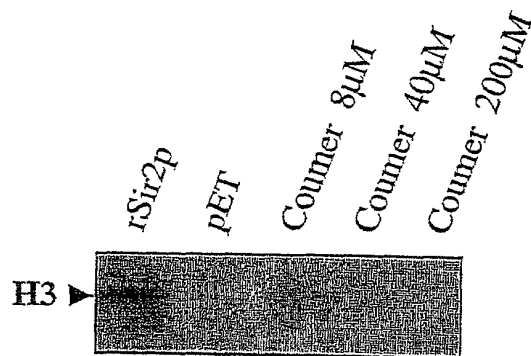


Figure 11c

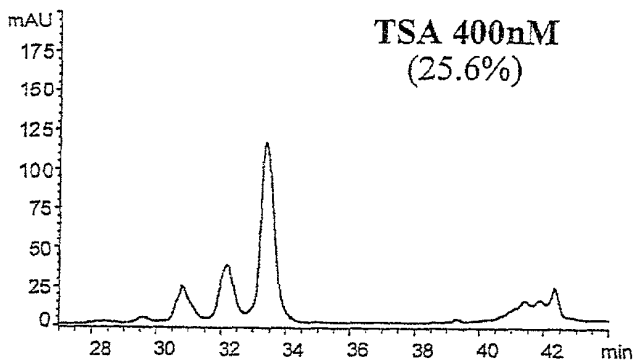


Figure 11b

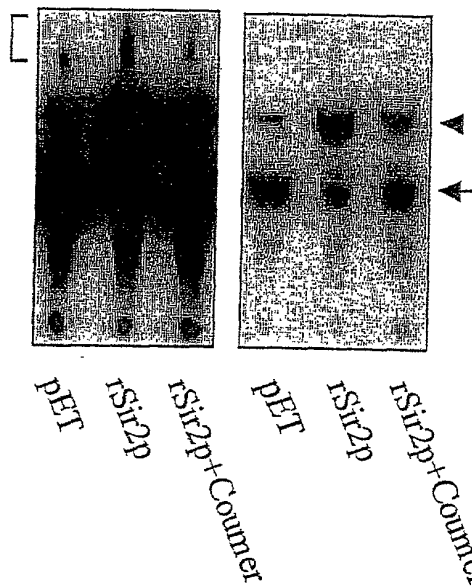


Figure 11d

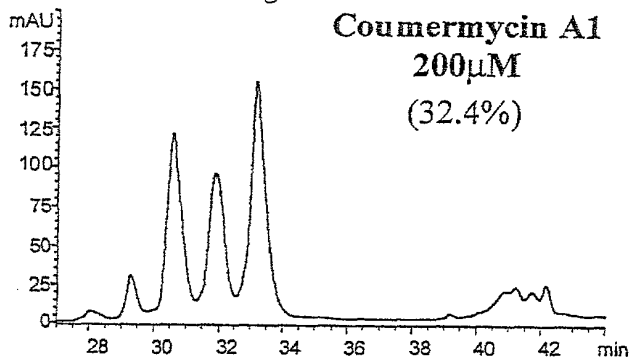


Figure 11e

0050.1618-001

1	M A D E V A L A L Q A A G S P S A A A A M E A S Q P A D E P L R K P P R R G G
41	P G L G R S P G E P S A A V A P A A G C E A S A A P A A L W R E A A G A A
81	A S A E R E A P A T A V A G D G N G S G L R R E P R A A D F D D D E G E E E
121	D E A A A A A A A A I G Y R D N L L T D G L L T N G F H S C E S D D D R T
161	S H A S S S D W T P R P R I G P Y T F V Q Q H L M I G T D P R T L L K D L L P E
201	T I P P E L D D M T L W Q I V I N I L S E P P K H K R K D I N T I E D A Y K
241	L L Q E C K K I V L T G A G V S V S C Q I P D F R S R D G I Y A R L A V D F P
281	D L P D Q A M F D I E Y F R K D P R P F F K F A K E I Y P Q Q F P S L C H K
321	F I A L S D K E G K L L R N Y T O N I D T L E Q V A G I Q N I L Q C H G S F A T
361	A S C L I C K Y K V D C E A V R G D I F N Q V V P R C P R C P A D E P L A I M K
401	P E I V F F G E N L P E O F H R A M K Y D K D E V D L I V I G S S L K V R P V
441	A L I P S S I P H E V P Q I L I N R E P L I P H L H F D V E L G D C D V I I N E
481	L O H R L G G E Y A K L C N P V K L S E I T E K P P R P O K E L V H L S E L P
521	P T P L H I S E D S S P E R T V P Q D S V I A T L V D Q A T N N V N D L E
561	V S E S S O V E E K P Q E V Q T S R N V E N I V N E N P D F K A V G S S T A D K
601	N E R T S V A E I V R K C W P N R L A K E O I S K R L E G N Q Y L F V P P N R Y
641	I F H G A E V Y S D S E D D V L S S S C G S N S D S G T C Q S P S L E E P L E
681	D E S E I E E F Y N G L E D T E R P E C A G G S G F G A D G G D Q E V V N E A
721	I A T R Q E L T D V N Y P S D K S

Figure 12a

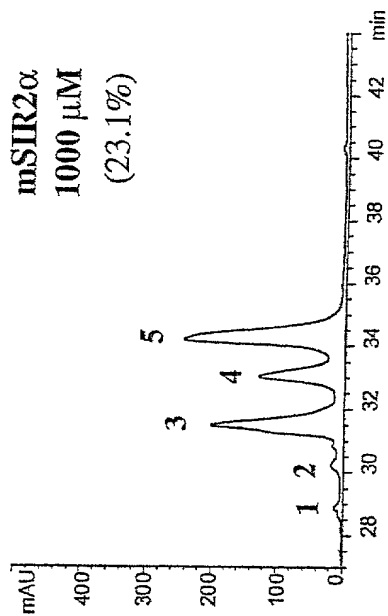


Figure 12c

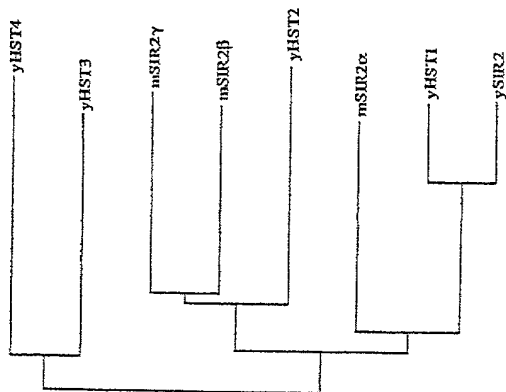


Figure 12b

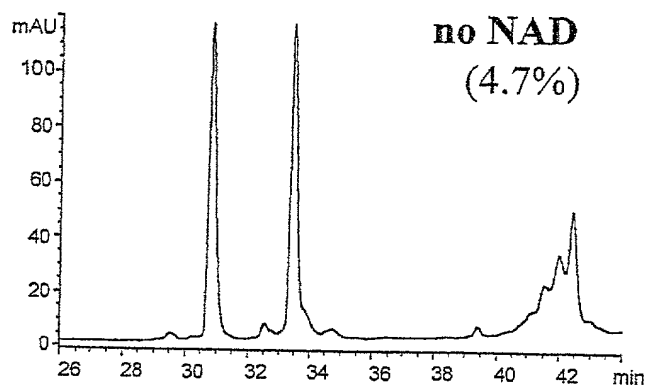


Figure 13a

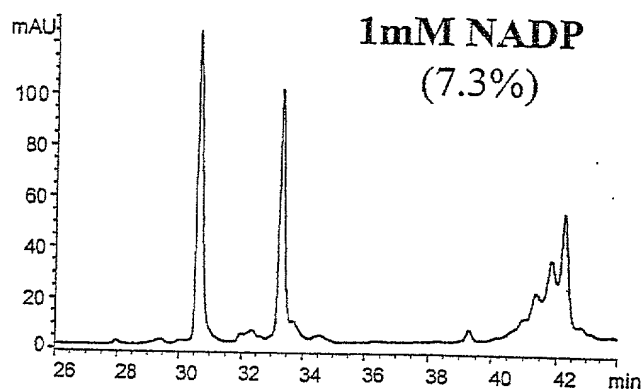


Figure 13d

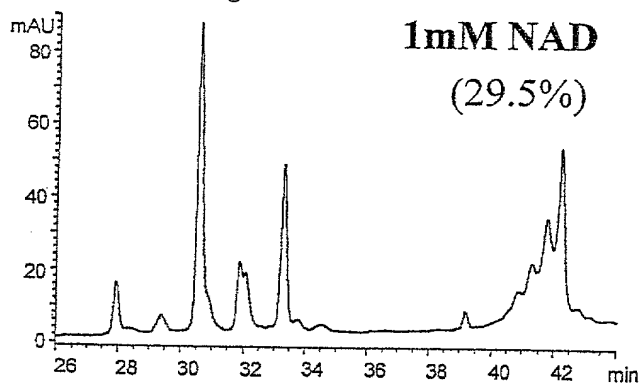


Figure 13b

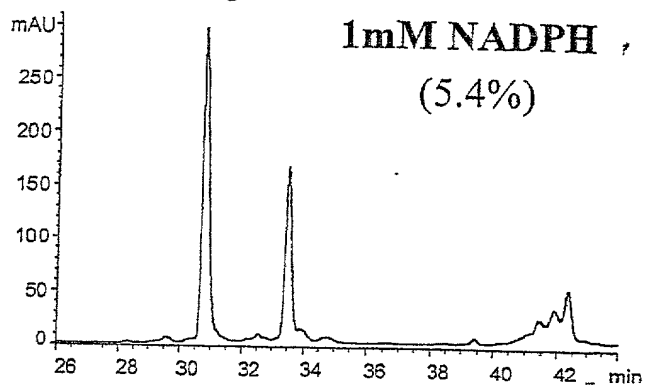


Figure 13e

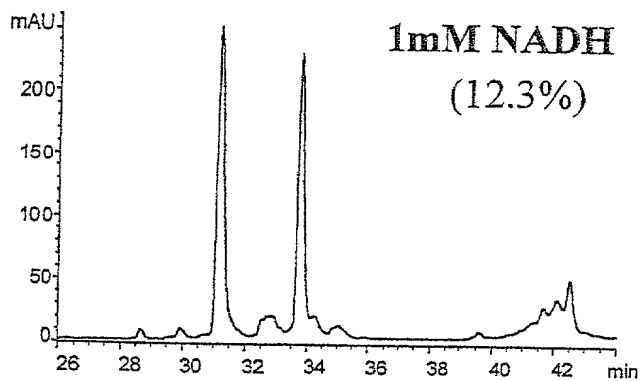
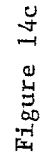
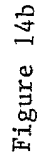
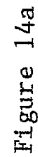


Figure 13c



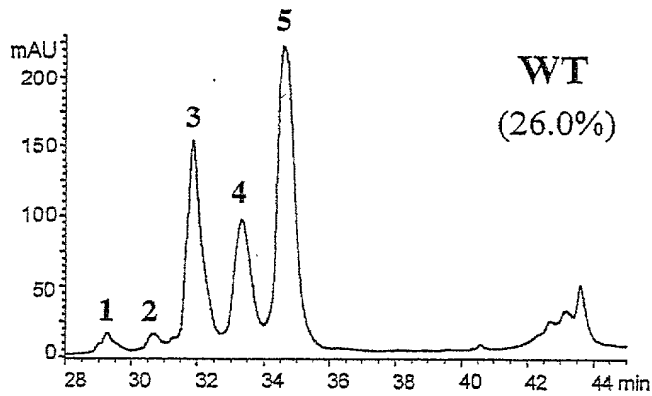


Figure 15a

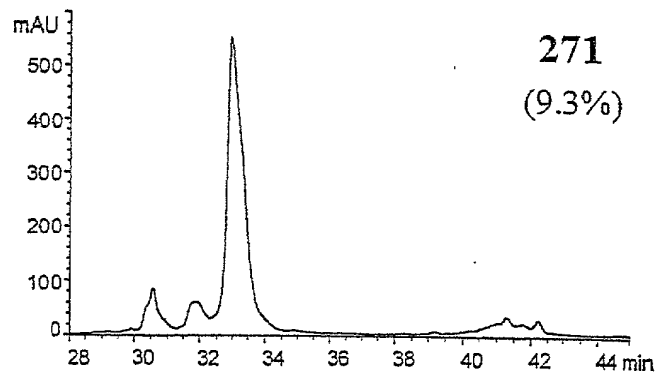


Figure 15e

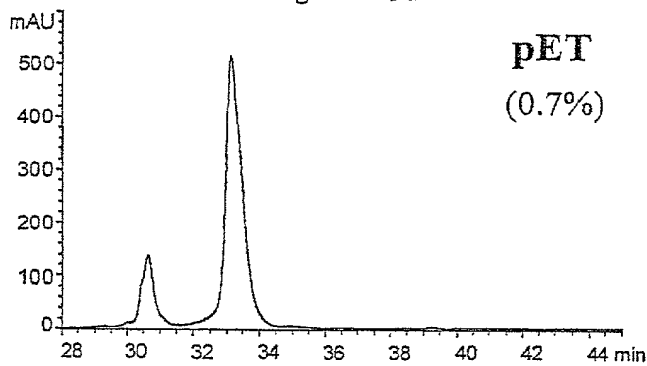


Figure 15b

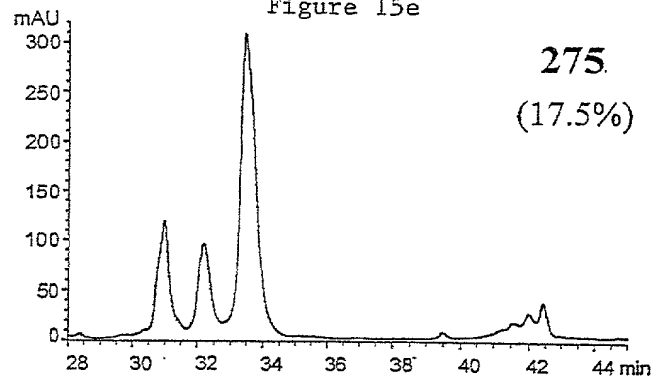


Figure 15f

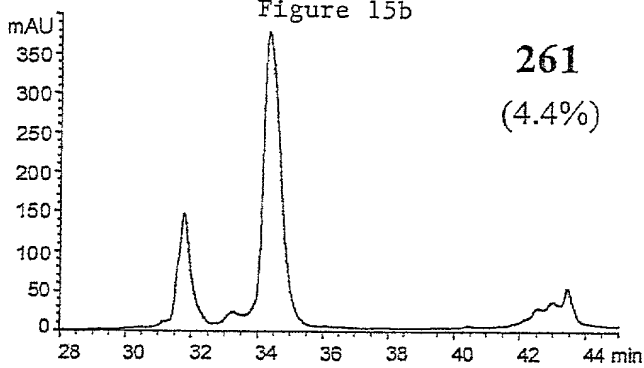


Figure 15c

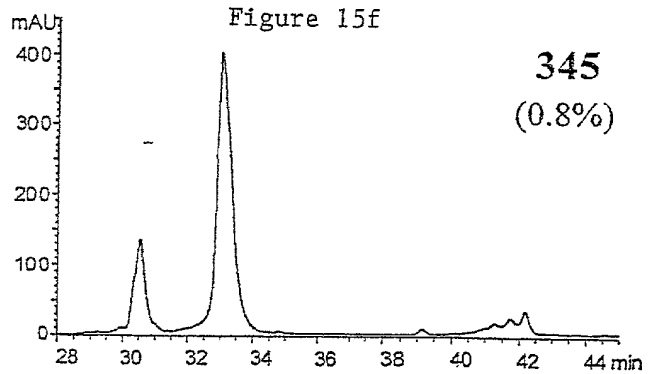


Figure 15g

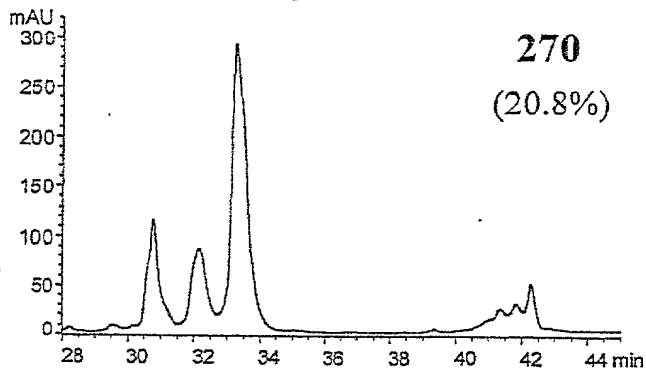


Figure 15d

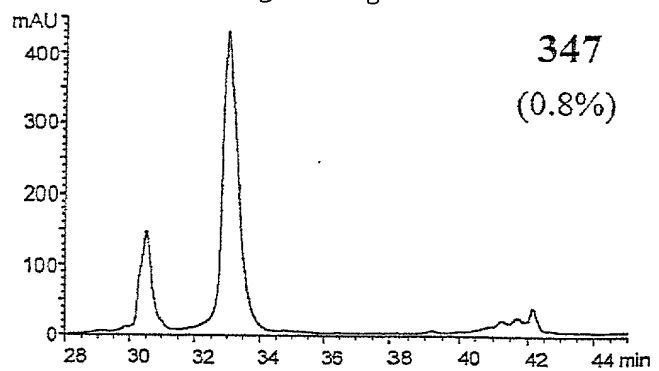


Figure 15h

0050.1618-001

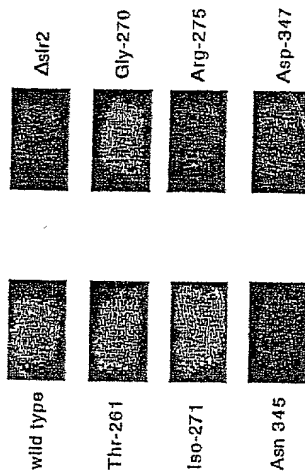


Figure 16b

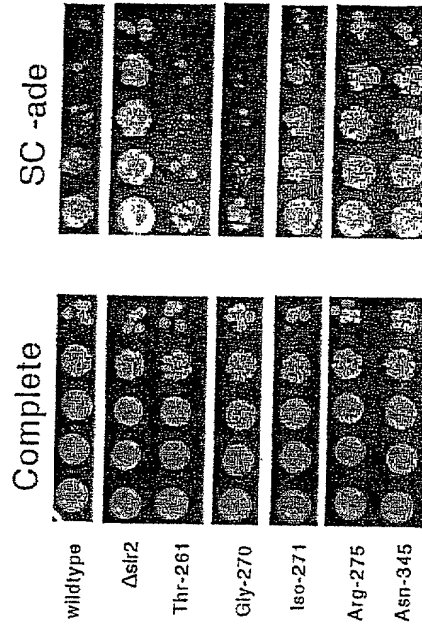


Figure 16d

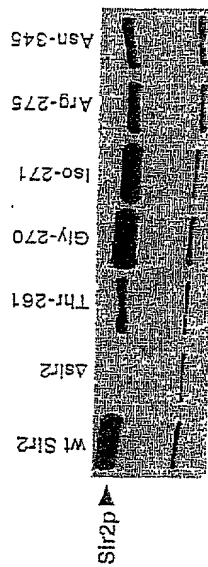


Figure 16a

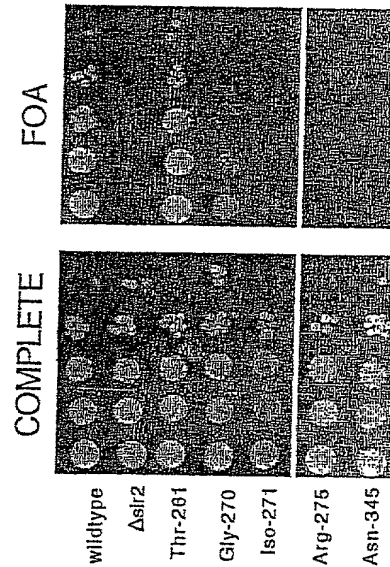


Figure 16c

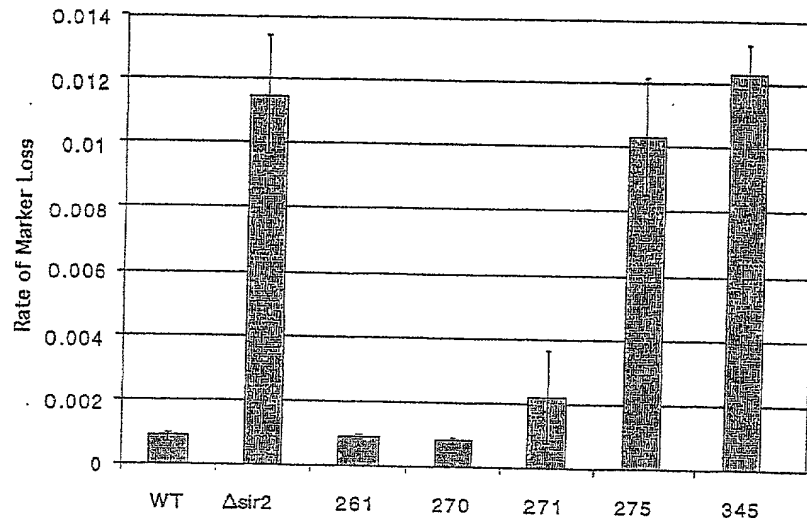


Figure 17a

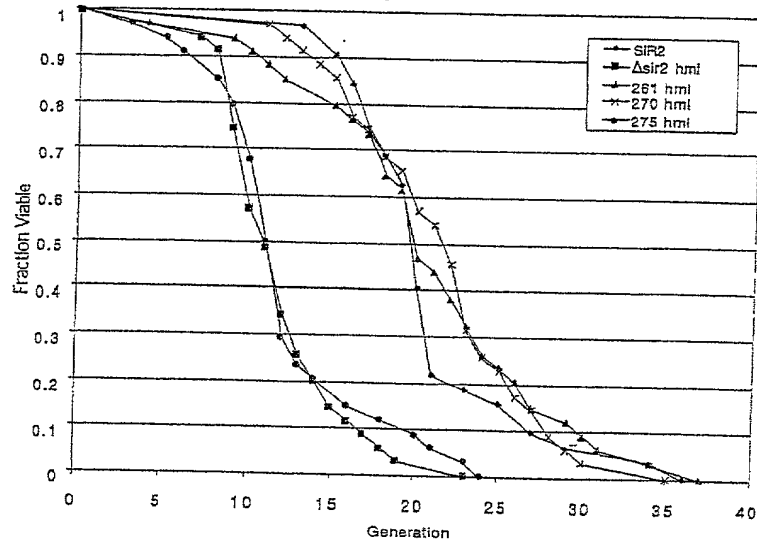


Figure 17b

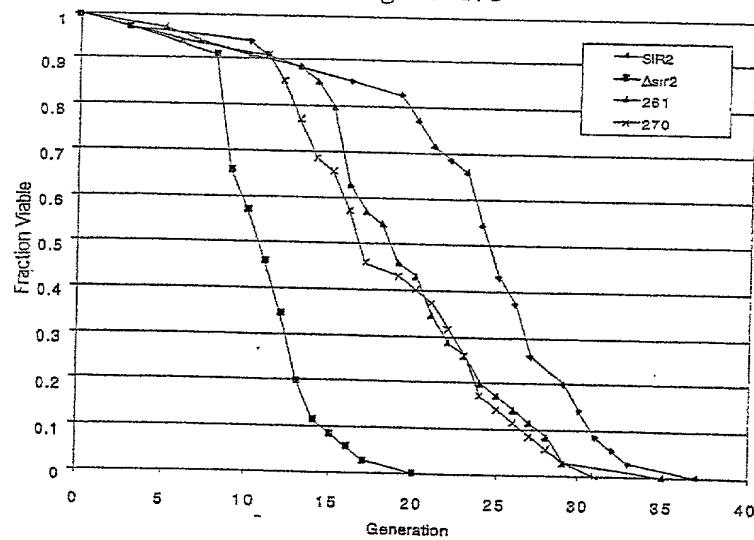


Figure 17c

0050.1618-001

Mutant	ADP-Rib. Activity (% of wt)	Deacetylase Activity (% of wt)	HM Silencing	Telomere Silencing	rDNA Silencing	rDNA Recombi- nation	Mean Life Span (HML+)
sir2Δ	0%	2.7%	-	-	-	1.15%	11.4
wildtype	100%	100%	+	+	+	0.09%	24.4
Thr-261	4%	17%	+	+	+	0.09%	19.8
Gly-270	7%	80%	+	+/-	+	0.08%	18.9
Iso-271	8%	36%	+	-	+/-	0.22%	ND
Arg-275	100%	67%	-	-	-	1.03%	ND
Asn-345	0%	3%	-	-	-	1.22%	ND
Asp-347	0%	3%	-	ND	ND	ND	ND

Figure 18

ySIR2	257	ILEVLTGAGVSTSLGIPDFRS	-	SEGFYYSKIKH	-	-	286									
yHST1	203	ILEVLTGAGVSTSLGIPDFRS	-	SEGFYYSKIKH	RH	-	232									
yHST2	27	VIFMVGAGISTSCGIPDFRS	P	GTGLYHNLAR	-	-	57									
yHST3	55	LAOLTCAGISTSCGIPDFRS	-	SDGLYDLVKKDC	-	-	86									
yHST4	95	MVVVSGAGISVAAGIPDFRS	-	SEGFYYSKIKH	-	-	126									
mSIR2alpha	263	ILEVLTGAGVSTSLGIPDFRS	-	RDGLYARLAVDF	-	-	294									
mSIR2beta	79	VICLVGAGISTSCGIPDFRS	P	STGLYANLEK	-	-	109									
mSIR2g...	1	-	-	GTRLYSNLQQ	-	-	10									
AI465098	48	VVEHTGAGISTASGIPDFRG	-	PHGVWTMEER	-	-	77									
AI465820	67	LLVMTGAGISTESCIPDYRS	E	KVGLYARTDR	-	-	97									
AI466061	59	IAAISGAGVSAESGVPTFRG	-	AGGYWRKWQA	-	-	88									
ySIR2	287	-	-	LGLDDPDQVFENYN	FMHDPSPV	-	FYNIANM	314								
yHST1	233	-	-	LGLDDPDQVFENLD	IFLQDPSV	-	FYNIAHM	260								
yHST2	58	-	-	LKLPYPEAVFDV	DEFQSDPLP	-	FYTIAKE	85								
yHST3	87	SQY	WSIKSGREVED	ISLFRDDFK	SI	FAKEMER	119									
yHST4	127	-	-	GKDLFDYNRYC	DESMSLKFN	-	QLMVSL	154								
mSIR2alpha	295	-	-	PDLPPDQAVFD	EYFRKDP RP	-	FFKFAKE	322								
mSIR2beta	110	-	-	YHLPYPEA	FE SYFKKHREP	-	FFALAKE	137								
mSIR2g...	11	-	-	YDLPYPEA	FE LGFFHNPKP	-	FFMLAKE	38								
AI465098	78	-	-	GLAPKFDTEENA	-	-	-	90								
AI465820	98	-	-	-	RPIQ	-	H	DFVPVLRASG	-	-	-	-	114			
AI466061	89	-	-	-	QDLATPQAFARNPSQW	WFYH	-	-	-	-	-	-	YRRE	113		
ySIR2	315	VLP	-	-	PEK	YSPLHS	FIKMLQMKCK	LRLNRYTON	345							
yHST1	261	VLP	-	-	PENMYSPLHS	FIKMLQDKCK	LRLNRYTON	291								
yHST2	86	LYP	-	-	GNFRPSK	EHYLLKLFQDKDV	LKRVYTON	116								
yHST3	120	LYSNVQLAKPTKTH	KF	AHLKDRNK	LRLCYTON	152										
yHST4	155	RLS	-	-	KNCQPTK	HEMLNEFARDGR	LRLCYTON	185								
mSIR2alpha	323	LYP	-	-	GQFQPSLCHK	FEALSDKEGK	LRLNRYTON	353								
mSIR2beta	138	LYP	-	-	GQFKPTICHYFI	RLKEKGL	LRLCYTON	168								
mSIR2g...	39	LYP	-	-	GHYRPNVTHYFL	RLHDKEL	LRLCYTON	69								
AI465098	91	-	-	-	R	-	PSKTHMAL	VQLERMCF	LSFLVSON	115						
AI465820	115	TWP	-	-	ENLWAGLNSPL	LNPTQHTWL	-	-	-	-	-	-	137			
AI466061	114	VMR	-	-	SK	-	EPNPGHLA	LAQCEAR	-	-	-	-	-	133		
ySIR2	346	IDNLESYAGISTD	-	-	-	-	-	-	-	-	-	-	-	KLVO	362	
yHST1	292	IDNLESYAGIDPD	-	-	-	-	-	-	-	-	-	-	-	KLVO	308	
yHST2	117	IDTLERQAGVKDD	-	-	-	-	-	-	-	-	-	-	-	L	E	133
yHST3	153	IDGLEESIGLTL	SNRKLPLTS	FSSHWKNL	DDVVQ	-	-	-	-	-	-	-	-	-	-	185
yHST4	186	IDGLDTQLPHLS	TN	-	-	-	-	-	-	-	-	-	-	VPLAKPIPS	TYQ	211
mSIR2alpha	354	IDTLEQVAGIQR	-	-	-	-	-	-	-	-	-	-	-	-	-	368
mSIR2beta	169	IDTLERVAGLEPQ	-	-	-	-	-	-	-	-	-	-	-	-	-	185
mSIR2g...	70	IDGLERASGPAS	-	-	-	-	-	-	-	-	-	-	-	-	-	86
AI465098	116	VDGLDYSRSGFPRD	-	-	-	-	-	-	-	-	-	-	-	-	-	132
AI465820	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137
AI466061	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	133

Figure 19

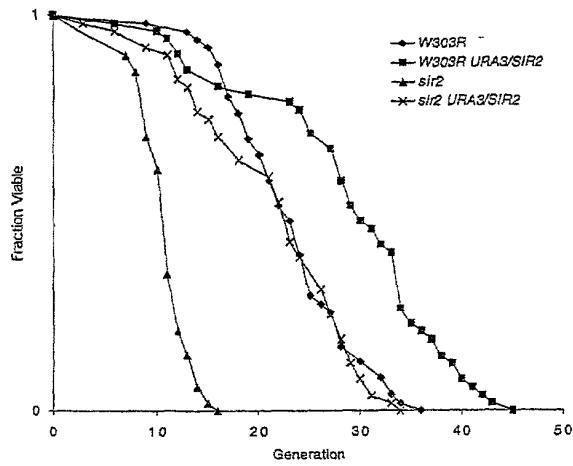


Figure 20

10 20 30 40 50 60
GCGGAGCAGAGGAGGCGAGGGCGGAGGGCCAGAGAGGCAGTTGGAAGATGGCGGACGAGG
M A D E V

70 80 90 100 110 120
TGGCGCTCGCCCTTCAGGCCCGCGGCTCCCTTCGCGGGCGGCCGCCATGGAGGCCGCGT
A L A L Q A A G S P S A A A A M E A A S

130 140 150 160 170 180
CGCAGCCGGCGGACGAGCCGCTCCGCAAGAGGCCCCGCGGAGACGGGCCTGGCCTCGGGC
Q P A D E P L R K R P R R D G P G L G R

190 200 210 220 230 240
GCAGCCCGGGCGAGCCGAGCGCAGCAGTGGCGCCGCGCGCGGGGTGTGAGGCGGCGA
S P G E P S A A V A P A A A G C E A A S

250 260 270 280 290 300
GCGCCGCGGCCCGCGGCGCTGTGGCGGGAGGCGGCAGGGGCGGCGGCGAGCGCGGAGC
A A A P A A L W R E A A G A A A S A E R

310 320 330 340 350 360
GCGGAGGCCCGGCGACGGCCGTGGCCGGGGACGGAGACAATGGGTCCGGCCTGCGGCGGG
E A P A T A V A G D G D N G S G L R R E

370 380 390 400 410 420
AGCCGAGGGCGGCTGACGACTTCGACGACGACGAGGGCGAGGAGGAGGACGAGGCGGCGG
P R A A D D F D D D E G E E E D E A A A

430 440 450 460 470 480
CGGCAGCGGCGGCGGCGAGCGATCGGCTACCGAGACAACCTCCTGTTGACCGATGGACTCC
A A A A A A I G Y R D N L L L T D G L L

490 500 510 520 530 540
TCACTAATGGCTTTTCATTCTGTGAAAGTGATGACGATGACAGAACGTCACACGCCAGCT
T N G F H S C E S D D D D R T S H A S S

550 560 570 580 590 600
CTAGTGACTGGACTCCGCGGCCGCGGATAGGTCCATATACTTTTGTTCAGCAACATCTCA
S D W T P R P R I G P Y T F V Q Q H L M

610 620 630 640 650 660
TGATTGGCACCGATCCTCGAACAATTCTTAAAGATTTATTACCAGAAACAATTCTCCAC
I G T D P R T I L K D L L P E T I P P P

670 680 690 700 710 720
CTGAGCTGGATGATATGACGCTGTGGCAGATTGTTATTAAATATCCTTTTCAGAACCAACAA
E L D D M T L W Q I V I N I L S E P P K

730 740 750 760 770 780
AGCGGAAAAAAGAAAAAGATATCAATACAATTGAAGATGCTGTGAAGTTACTGCAGGAGT
R K K R K D I N T I E D A V K L L Q E C

790 800 810 820 830 840
GTAAAAAGATAATAGTTCTGACTGGAGCTGGGGTTTCTGTCTCCTGTGGGATTCTGACT
K K I I V L T G A G V S V S C G I P D F

850 860 870 880 890 900
TCAGATCAAGAGACGGTATCTATGCTCGCCTTGCGGTGGACTTCCCAGACCTCCCAGACC
R S R D G I Y A R L A V D F P D L P D P

Figure 21a

910 920 930 940 950 960
 CTC AAGCCATGTTTGATATTGAGTATTTTAGAAAAGACCCAAGACCATTCTTCAAGTTTG
 Q A M F D I E Y F R K D P R P F F K F A

970 980 990 1000 1010 1020
 CAAAGGAAATATATCCCGGACAGTTCAGCCGCTCTCTGTGTACAAAATTCATAGCTTTGT
 K E I Y P G Q F Q P S L C H K F I A L S

1030 1040 1050 1060 1070 1080
 CAGATAAGGAAGGAAAAC TACTTCGAAATTATACTCAAAATATAGATACCTTGGAGCAGG
 D K E G K L L R N Y T Q N I D T L E Q V

1090 1100 1110 1120 1130 1140
 TTGCAGGAATCCAAAGCATCCTTCAGTGTTCATGGTTCCCTTTGCAACAGCATCTTGCCTGA
 A G I Q R I L Q C H G S F A T A S C L I

1150 1160 1170 1180 1190 1200
 TTTGTAAATACAAAGTTGATTGTGAAGCTGTTCTGTTGAGACATTTTTAATCAGGTAGTTC
 C K Y K V D C E A V R G D I F N Q V V P

1210 1220 1230 1240 1250 1260
 CTCGGTGCCTTAGGTGCCCAGCTGATGAGCCACTTGCCATCATGAAGCCAGAGATTGTCT
 R C P R C P A D E P L A I M K P E I V F

1270 1280 1290 1300 1310 1320
 TCTTTGGTGAAAAC TTAACAGAACAGTTTCATAGAGCCATGAAGTATGACAAAGATGAAG
 F G E N L P E Q F H R A M K Y D K D E V

1330 1340 1350 1360 1370 1380
 TTGACCTCCTCATTTGTTATTGGATCTTCTCTGAAAGTGAGACCAGTAGCACTAATTCCAA
 D L L I V I G S S L K V R P V A L I P S

1390 1400 1410 1420 1430 1440
 GTTCTATACCCCATGAAGTGCCTCAAATATTAAATAAATAGGGAACCTTTGCCTCATCTAC
 S I P H E V P Q I L I N R E P L P H L H

1450 1460 1470 1480 1490 1500
 ATTTTGTATGTAGAGCTCCTTTGGAGACTGCGATGTTATAATTAAATGAGTTGTGTATAGGC
 F D V E L L G D C D V I I N E L C H R L

1510 1520 1530 1540 1550 1560
 TAGGTGGTGAATATGCCAAACTTTGTTGTAACCTGTAAAGCTTTTCAGAAATTACTGAAA
 G G E Y A K L C C N P V K L S E I T E K

1570 1580 1590 1600 1610 1620
 AACCTCCACGCCCACAAAAGGAATTTGGTTTCATTTATCAGAGTTGCCACCAACACCTCTTC
 P P R P Q K E L V H L S E L P P T P L H

1630 1640 1650 1660 1670 1680
 ATATTTTCGGAAGACTCAAGTTACCTGAAAGAACTGTACCACAAGACTCTTCTGTGATTG
 I S E D S S S P E R T V P Q D S S V I A

1690 1700 1710 1720 1730 1740
 CTACACTTGTAGACCAAGCAACAACAACATGTTAATGATTTAGAAGTATCTGAATCAA
 T L V D Q A T N N N V N D L E V S E S S

1750 1760 1770 1780 1790 1800
 GTTGTGTGGAAGAAAAACCACAAGAAGTACAGACTAGTAGGAATGTTGAGAACATTAAATG
 C V E E K P Q E V Q T S R N V E N I N V

1810 1820 1830 1840 1850 1860
 TGGAAAATCCAGATTTTAAAGGCTGTTGGTTCCAGTACTGCAGACAAAATGAAAGAACTT
 E N P D F K A V G S S T A D K N E R T S

1870 1880 1890 1900 1910 1920
 CAGTTGCAGAACAGTGAGAAAATGCTGGCCTAATAGACTTGCAAAGGAGCAGATTAGTA
 V A E T V R K C W P N R L A K E Q I S K

Figure 21b

1930 1940 1950 1960 1970 1980
AGCGGCTTGAGGGTAATCAATACCTGTTTGTACCACCAAATCGTTACATATTCCACGGTG
R L E G N Q Y L F V P P N R Y I F H G A

1990 2000 2010 2020 2030 2040
CTGAGGTATACTCAGACTCTGAAGATGACGTCCTTGTCTCTAGTTCTCTGTGGCAGTAACA
E V Y S D S E D D V L S S S S C G S N S

2050 2060 2070 2080 2090 2100
GTGACAGTGGCACATGCCAGAGTCCAAGTTTAGAAGAACCCTTGAAGATGAAAGTGAAA
D S G T C Q S P S L E E P L E D E S E I

2110 2120 2130 2140 2150 2160
TTGAAGAATTCTACAATGGCTTGAAGATGATACGGAGAGGCCCGAATGTGCTGGAGGAT
E E F Y N G L E D D T E R P E C A G G S

2170 2180 2190 2200 2210 2220
CTGGATTTGGAGCTGATGGAGGGGATCAAGAGGTTGTTAATGAAGCTATAGCTACAAGAC
G F G A D G G D Q E V V N E A I A T R Q

2230 2240 2250 2260 2270 2280
AGGAATTGACAGATGTAACTATCCATCAGACAAATCATAACACTATTGAAGCTGTCCGG
E L T D V N Y P S D K S *

2290 2300 2310 2320 2330 2340
ATTGAGGAATTGCTCCACCAGCATTTGGGAACCTTTAGCATGTCAAAAAAATGAATGTTTAC

2350 2360 2370 2380 2390 2400
TTGTGAACCTGAACAAGGAAATCTGAAAGATGTATTATTTATAGACTGGAAAATAGATTG

2410 2420 2430 2440 2450 2460
TCTTCTTGGATAATTTCTAAAGTTCCATCATTTCTGTTTGTACTTGTACATTCAACACTG

2470 2480 2490 2500 2510 2520
TTGGTTGACTTCATCTTCCTTTCAAGGTTTCATTTGTATGATACATTCTGTATGTATGTATA

2530 2540 2550 2560 2570 2580
ATTTTGTTTTTTGCCTAATGAGTTTCAACCTTTTAAAGTTTTCAAAGCCATTGGAATGT

2590 2600 2610 2620 2630 2640
TAATGTAAAGGGAACAGCTTATCTAGACCAAAGAATGGTATTTTCACACTTTTTTGTTTGT

2650 2660 2670 2680 2690 2700
AACATTGAATAGTTTAAAGCCCTCAATTTCTGTTCTGCTGAACTTTTATTTTATAGGACAG

2710 2720 2730 2740 2750 2760
TTAACTTTTTTAAACACTGGCATTTTCCAAAACCTTGTGGCAGCTAACTTTTTTAAATCACA

2770 2780 2790 2800 2810 2820
GATGACTTGTAAATGTGAGGAGTCAGCACCGTGTCTGGAGCACTCAAACTTGGGCTCAGT

2830 2840 2850 2860 2870 2880
GTGTGAAGCGTACTTACTGCATCGTTTTTGTACTTGTCTGCAGACGTGGTAATGTCCAAAC

2890 2900 2910 2920 2930 2940
AGGCCCCGTGAGACTAATCTGATAAATGATTTTGAAATGTGTTTTCAGTTGTTCTAGAAACA

2950 2960 2970 2980 2990 3000
ATAGTGCCCTGTCTATATAGGTTCCCTTAGTTTGAATATTTGCCATTGTTTAAATTAAATAC

3010 3020 3030 3040 3050 3060
CTATCACTGTGGTAGAGCCTGCATAGATCTTCACCACAAATACTGCCAAGATGTGAATAT

3070 3080 3090 3100 3110 3120
GCAAAGCCTTTCTGAATCTAATAATGGTACTTCTACTGGGGAGAGTGTAAATATTTTGGAC

3130 3140 3150 3160 3170 3180
TGCTGTTTTTCCATTAATGAGGAAAGCAATAGGCCTCTTAATTAAAGTCCCAAAGTCATA

Figure 21c

3190 3200 3210 3220 3230 3240
AGATAAATTGTAGCTCAACCAGAAAGTACACTGTTGCCTGTTGAGGATTTGGTGTAAATGT
3250 3260 3270 3280 3290 3300
ATCCCAAGGTGTTAGCCTTGTATTATGGAGATGAATACAGATCCAATAGTCAAATGAAAC
3310 3320 3330 3340 3350 3360
TAGTTCTTAGTTAATTTAAAAGCTTAGCTTGCCTTAAAACTAGGGATCAATTTTCTCAACT
3370 3380 3390 3400 3410 3420
GCAGAAACTTTTAGCCTTTCAAACAGTTTCAACCTCAGAAAGTCAGTATTTATTTTACAG
3430 3440 3450 3460 3470 3480
ACTTCTTTTGGAACATTGCCCCCAAATTTAAATATTCATGTGGGTTTAGTATTTATTACAA
3490 3500 3510 3520 3530 3540
AAAAATGATTTGAAATATAGCTGTTCTTTATGCATAAAATACCCAGTTAGGACCATTACT
3550 3560 3570 3580 3590 3600
GCCAGAGGAGAAAAGTATTAAGTAGCTCATTTCCCTACCTAAAAGATAACTGAATTTATT
3610 3620 3630 3640 3650 3660
TGGCTACACTAAAGAATGCAGTATATTTAGTTTTCCATTTGCATGATGTGTTTGTGCTAT
3670 3680 3690 3700 3710 3720
AGACAATATTTTAAATTGAAAAATTTGTTTTAAATTATTTTTACAGTGAAGACTGTTTTTC
3730 3740 3750 3760 3770 3780
AGCTCTTTTTTATATTGTACATAGACTTTTATGTAATCTGGCATATGTTTTGTAGACCGTT
3790 3800 3810 3820 3830 3840
TAATGACTGGATTTATCTTCCTCCAACTTTTGAAATACAAAAACAGTGTTTTATACTAAAA
3850 3860 3870
AAAAAAAAGTCGACGCGGCCGCGAATTC

10 20 30 40 50 60
CCACGCGTCCGCGGACGCGTGGGCACGGGACAGAGCAGTCGGTGACAGTCCCGAGGGCCC
T R P R T R G H G T E Q S V T V P R A P

70 80 90 100 110 120
CCACCCCGTTCCCATGGCCGAGCCGACCGATTTCAGACTCGGACACTGAGGGAGGAGCCA
T P F P W P S R T D S D S D T E G G A T

130 140 150 160 170 180
CTGGTGAGAGGCAGAGATGGACTTCCTGAGGAATTTATTACCCAGACCCTGGGCCTGG
G G E A E M D F L R N L F T Q T L G L G

190 200 210 220 230 240
GTTCCCAAAGGAGCGTCTTCTAGACGAGCTGACCCTCGAAGGAGTGACACGCTACATGC
S Q K E R L L D E L T L E G V T R Y M Q

250 260 270 280 290 300
AGAGCGAGCGCTGCCGCAAGGTCATCTGTTTGGTGAGCCGGAATCTCCACGTCCGCGG
S E R C R K V I C L V G A G I S T S A G

310 320 330 340 350 360
GTATCCCTGACTTCCGCTCCCCGTCCACTGGCCTCTATGCAAACCTGGAGAAGTACCACC
I P D F R S P S T G L Y A N L E K Y H L

370 380 390 400 410 420
TTCCTTACCCAGAGGCCATCTTTGAGATCAGCTACTTCAAGAAACATCCGGAACCTTCT
P Y P E A I F E I S Y F K K H P E P F F

430 440 450 460 470 480
TTGCCCTTGCCAAGGAGCTCTATCCCGGGCAGTTCAAGCCAACCATCTGCCACTACTTCA
A L A K E L Y P G Q F K P T I C H Y F I

490 500 510 520 530 540
TCCGCCTGCTGAAGGAGAAGGGGCTGCTGCTGCGCTGCTACACGCAGAACATAGACACGC
R L L K E K G L L L R C Y T Q N I D T L

550 560 570 580 590 600
TGGAACGAGTGCGGGGCTGGAGCCCCAGGACCTGGTGGAGGCCACGGCACCTTCTACA
E R V A G L E P Q D L V E A H G T F Y T

610 620 630 640 650 660
CATCACACTGTGTCAACACCTCCTGCAGAAAAGAATACACGATGGGCTGGATGAAAGAGA
S H C V N T S C R K E Y T M G W M K E K

670 680 690 700
AGATTTCTCAGAAGCAACTCCAGGTGTGAGCAGTGTCA
I S Q K Q L P G V S S V

Figure 22

0050.1618-001

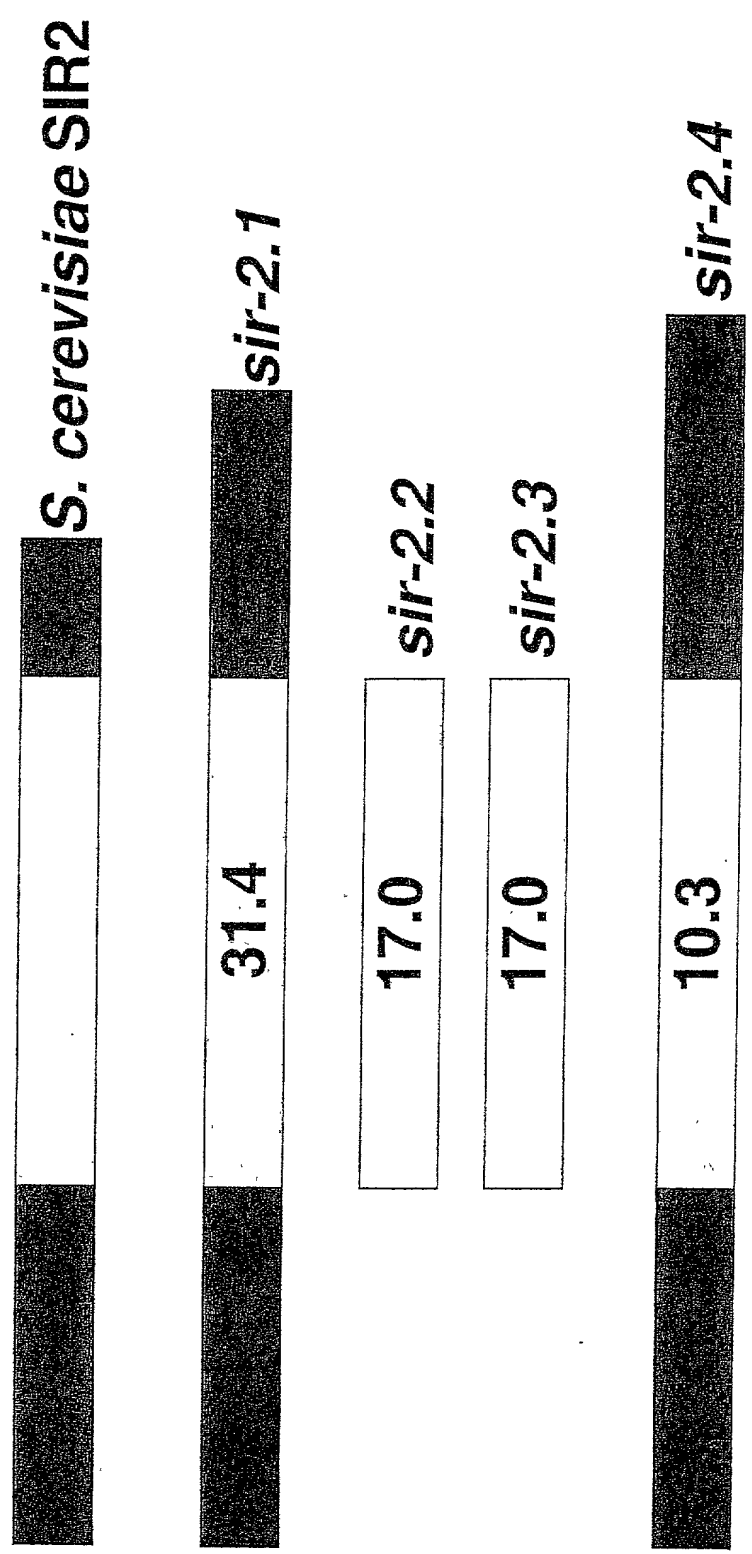


Figure 23

Figure 24A

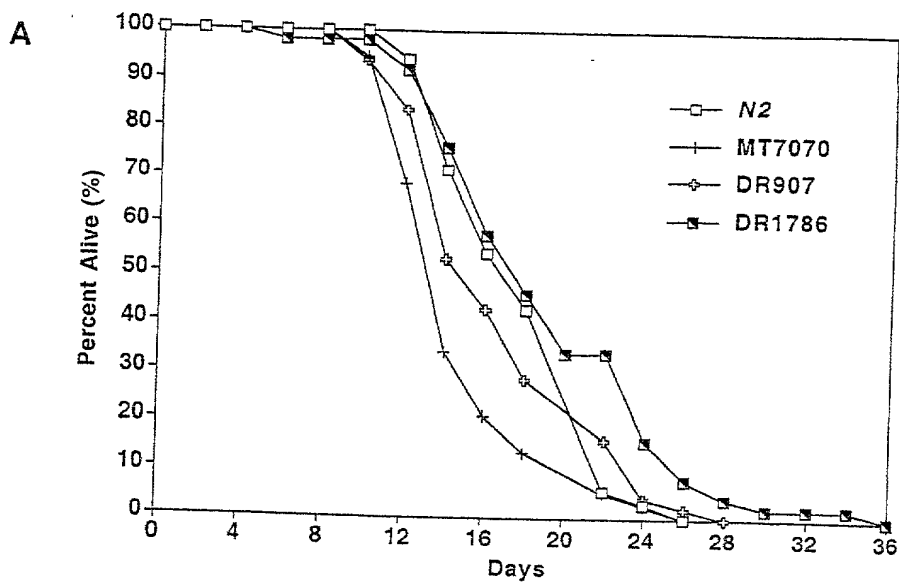


Figure 24B

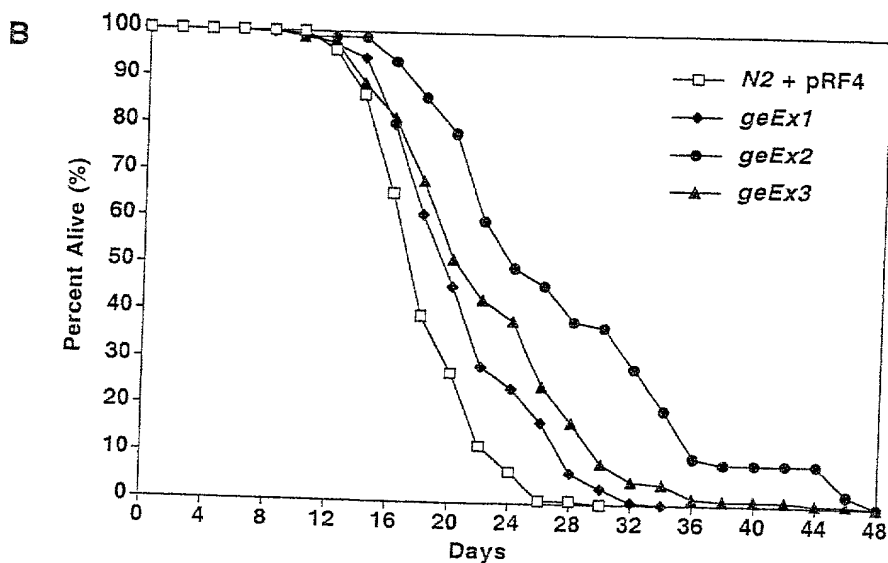


Figure 24C

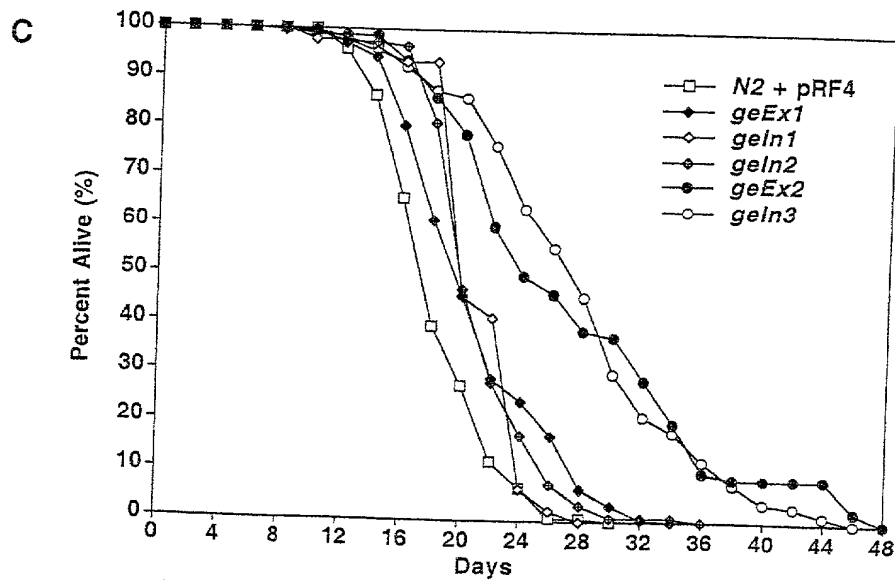


Figure 25A

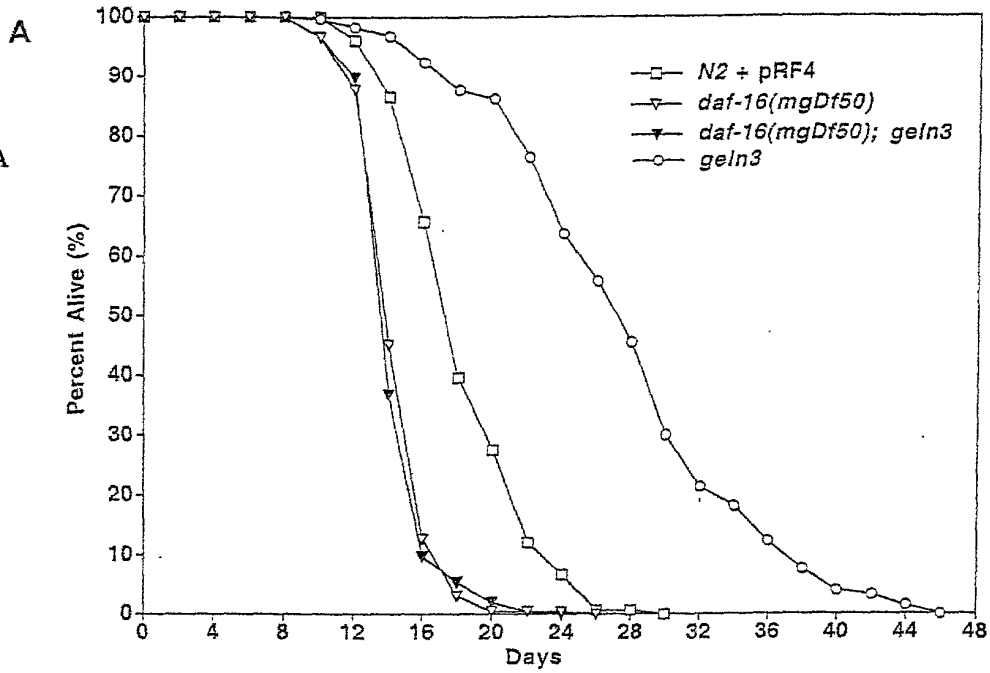


Figure 25B

